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AMSAT NEWS SERVICE
ANS-344

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The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to: ans-editor [at] amsat.org

You can sign up for free e-mail delivery of the AMSAT News Service Bulletins via the ANS List; to join this list see: https://mailman.amsat.org/postorius/lists/ans.amsat.org/

ANS-344 AMSAT News Service Weekly Bulletins

To: All RADIO AMATEURS
From: Radio Amateur Satellite Corporation
712 H Street NE, Suite 1653
Washington, DC 20002

DATE 2023 December 10

Proposal Submitted to ESA for Geostationary Microwave Amateur Payload

A proposal has been submitted to the European Space Agency (ESA) by AMSAT-UK, the British Amateur Television Club (BATC), and AMSAT-NA, with input from members of the UK Microwave Group for a geostationary microwave amateur payload with planned coverage of at least part of North America. This proposal was submitted in response to a presentation at the AMSAT-UK Colloquium from Frank Zeppenfeldt, PD0AP, of ESA, who has secured €250,000 in funding to investigate the possibility of an amateur satellite or payload in geostationary orbit.

The proposal notes the desire for coverage of all ESA member and cooperating states, but that it is not possible for a satellite in geostationary orbit to cover the entirety of this territory, which ranges from Cyprus at approximately 34 degrees east to western Canada at approximately 141 degrees west and lays out example coverage from three slots: 5 degrees west, 30 degrees west, and 47 degrees west. In a later section, the proposal also discusses two non-geostationary orbit options

that could provide the desired coverage: a tundra orbit and a high earth orbit just below the geostationary belt.

The amateur radio and educational payload proposed consists of two 5.6 GHz uplink and 10 GHz downlink transponders (Mode C/x) - one 250 kHz wide with 20 watts of output for narrowband modes such as SSB, CW, and narrowband digital mdoes and one 1 MHz wide with 20 watts of output for wideband modes, including amateur television. The transponder design would include an optional SDR block for signal regeneration. Additionally, a 24 GHz receiver would also function as a transponder uplink. The proposal also calls for a 47 or 74 GHz multimode beacon or additional downlink transmitter, an earth-pointing camera with a still image downlink as part of the telemetry or beacon for educational outreach, and a red or near-infrared laser experiment aimed towards Western Europe. All downlink signals would be phase coherent with timing by GPS reference or a chip-scale atomic clock.

The full proposal text can be found at https://www.amsat.org/wordpress/wp-content/uploads/2023/12/ESA-GEO-proposal-AMSAT-UK.pdf

More information about the ESA opportunity can be found in PD0AP's AMSAT-UK Colloquium presentation at https://www.youtube.com/watch?v=_FTvlEyDa1Y

[ANS thanks AMSAT-UK, the British Amateur Television Club (BATC), AMSAT-NA, and the UK Microwave Group for the above information]

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LAST CALL!

The 2023 AMSAT President's Club coins are still available!
To commemorate the 40th anniversary of its launch
on June 16, 1983, this year's coin features
an image of AMSAT-OSCAR 10.
Join the AMSAT President's Club today and help
Keep Amateur Radio in Space!

https://www.amsat.org/join-the-amsat-presidents-club/

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ARISS Celebrates 40th Anniversary of Owen Garriott's STS-9 Operation

ARISS has been celebrating the 40th anniversary of the first ham in space. On November 28, 1983, the Space Shuttle Columbia lifted off with Owen Garriott, W5LFL. Onboard was a specially customized Motorola MX-340 two meter handheld radio and an antenna that attached to the shuttle's window.

Shortly before crossing the west coast on December 1, 1983, Columbia executed a roll manuever that exposed the antenna toward earth and W5LFL began to call CQ. At 02:38 UTC, Lance Collister, WA1JXN, in Frenchtown, MT answered his CQ and made the first amateur radio QSO with a human in space. A rush of QSOs followed over the next several days before Columbia returned to Earth on December 8th. Among the amateur operators in the log were Senator Barry Goldwater, K7UGA, and King Hussein of Jordan, JY1.

Videos including QSOs from orbit have been posted to the ARISS YouTube page at https://www.youtube.com/@ARISSlive/videos

On December 7th, ARISS hosted a webinar with Owen's son, Richard Garriott, W5KWQ, who later operated the amateur radio station aboard the International Space Station. An archived video of the webinar can be found at https://www.youtube.com/watch?v=Ys0Jjn40Y_A

During the webinar, ARISS International Chair Frank Bauer, KA3HDO, announced that Richard Garriott would be the keynote speaker at ARISS's 40th anniversary celebration event in February 2024. Details for this event can be found at https://www.ariss.org/overview.html

Additionally, in celebration of the STS-9 mission, ARISS teams worldwide have come together to prepare an SSTV event.

SSTV from the ISS will be sent on 145.800 MHz using the PD120 format. Transmissions are scheduled to begin on December 16th at 10:15 UTC and end on December 19th at around 18:00 UTC.

Melissa Gaskill, a science author from Austin, Texas, has written a comprehensive review about the 40-year history of amateur radio in space. In her article, "Ham Radio in Space: Engaging with Students Worldwide for 40 Years," Gaskill explores the Shuttle Amateur Radio Experiment (SAREX), which is now known as Amateur Radio on the International Space Station (ARISS). The article can be found at https://www.nasa.gov/missions/station/iss-research/ham-radio-in-space-engaging-with-students-worldwide-for-40-years/

Gaskill said that while she wrote the article, she is not an expert on thesubject but there are many who are including Kenneth Ransom, N5VHO, International Space Station (ISS) Ham Project Coordinator since 2004.

Ransom said that amateur radio in space was a possibility even before 1983, when Astronaut Owen Garriott, W5LFL (SK), made history during the STS-9 Space Shuttle Columbia mission with the first amateur radio contact from space. NASA had been looking for ways to bring amateur radio to Skylab (a space station designed as an orbiting workshop for scientific research) and even the moon.

[ANS thanks ARISS and the ARRL for the above information]

AMSAT Publishes 2022 Financial Review and IRS Form 990

AMSAT has posted its IRS Form 990 and 2022 Financial Review on the AMSAT website at https://www.amsat.org/audit-and-other-financial-reports/

AMSAT publishes its financial statements as reviewed by an independent accountant as part of its commitment to transparency regarding its financial status with its membership and donors.

In 2022, AMSAT had total revenue of $306,801 and total expenses of $129,261. As of December 31, 2022, AMSAT reported net assets totaling $1,494,470.

In the decade between 2012 and 2022, AMSAT's reserves increased by nearly 250% while designing, constructing, and launching five Fox-1 satellites and working on several other projects, including GOLF, Fox Plus, the Linear Transponder Module, and the AMSAT CubeSatSim.

AMSAT thanks its membership and donors for their generous support over the years. Keeping amateur radio in space is an endeavor that requires significant financial resources. Despite the currently healthy status of AMSAT's finances, spending on hardware acquisitions for construction of GOLF and Fox Plus is expected to ramp up over the coming year, so please consider a donation if you are able.

AMSAT is a 501(c)(3) non-profit organization, so your contributions may be tax deductible. If you need to make a Required Minimum Distribution from a retirement account by the end of the year, please also consider making a

donation to AMSAT from your RMD. Donations may be made at
https://www.amsat.org/donate/

AMSAT also needs donations of time from interested volunteers with both technical and non-technical skills. Please visit https://www.amsat.org/volunteer-for-amsat/ and consider volunteering for AMSAT.

[ANS thanks AMSAT for the above information]

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astronauts and cosmonauts aboard the International Space Station. The downlink frequency on which to listen is 145.800 MHz worldwide.

Quick list of scheduled contacts and events:

Harbor Creek School, Harborcreek, PA, direct via KC3SGV

The ISS callsign is presently scheduled to be NA1SS
The downlink frequency is presently scheduled to be 145.800 MHz
The scheduled crewmember is Andreas Mogensen KG5GCZ
The ARISS mentor is KD8COJ

Contact is go for: Mon 2023-12-11 13:45:04 UTC 46 deg

Watch for Livestream at https://www.youtube.com/@AdvancedTechnologiesGroup

Obninsk, Russia, direct via TBD

The ISS callsign is presently scheduled to be RSØISS
The downlink frequency is presently scheduled to be 145.800 MHz
The scheduled crewmember is Konstantin Borisov
The ARISS mentor is RV3DR

Contact is go for Wed 2023-12-13 09:15 UTC

Primary School of Zipari Kos, Zipari, Greece, direct via SV5BYR

The ISS callsign is presently scheduled to be OR4ISS
The downlink frequency is presently scheduled to be 145.800 MHz
The scheduled crewmember is Andreas Mogensen KG5GCZ
The ARISS mentor is IKØWGF

Contact is go: Thu 2023-12-14 13:17:31 UTC 26 deg(

Watch for Livestream at
https://www.youtube.com/channel/UCVW_nsutRMEfS2e8tURrltw and also at
https://linktr.ee/zipariss2023

Comments on making general contacts

I have been seeing a lot of traffic on Facebook and I suspect on other social media sites with people asking why they are not hearing the crew make general contacts. First off the crew is very busy on the ISS and they simply may not have the time to just pick up the microphone and talk. Also, one needs to be aware of their normal daily schedule. I have listed below the constraints that we at ARISS have to follow in order to schedule the school contacts. Hopefully this will help you better schedule your opportunities.

Typical daily schedule

Wakeup to Workday start= 1.5 hours
Workday start to Workday end=12 hours
Workday end to Sleep= 2 hours
Sleep to wakeup= 8.5 hours

The crew's usual waking period is 0730 - 1930 UTC. The most common times to find a crew member making casual periods are about one hour after waking and before sleeping, when they have personal time. They're usually free most of the weekend, as well.

SSTV events are not that often. So please check out https://www.ariss.org/ for the latest information or watch for the ARISS announcements.

And don’t forget that the packet system is active.

As always, if there is an EVA, a docking, or an undocking; the ARISS radios are turned off as part of the safety protocol.

ARISS Radio Status

Columbus Module radios:

IORS (Kenwood D710GA) – STATUS - Configured. Default mode is for cross band repeater (145.990 MHz up {PL 67} & 437.800 MHz down).
* Capable of supporting USOS scheduled voice contacts, packet and voice repeater ops.

Service Module radios:

IORS (Kenwood D710GA) – STATUS - Temporarily stowed. Default mode is for packet operations (145.825 MHz up & down)
* Capable of supporting ROS scheduled voice contacts, packet, SSTV and voice repeater ops.

SSTV (Kenwood D710) – STATUS - OFF. Default mode is for scheduled SSTV operations (145.800 MHz down)
* Next planned operation date(s): 40th Anniversary of STS 9 (PD120 mode) - Schedule is Dec. 16 at 10:15 UTC | 5:15 AM ET through Dec. 19 around 1800 UTC | 1:00 PM ET.
* Specifically configured for SSTV ops.

The latest information on the operation mode can be found at https://www.ariss.org/current-status-of-iss-stations.html

The latest list of frequencies in use can be found at https://www.ariss.org/contact-the-iss.html

[ANS thanks Charlie Sufana, AJ9N, one of the ARISS operation team mentors for the above information]

Upcoming Satellite Operations

No scheduled operations are listed at this time.

A growing number of satellite rovers are currently engaged in sharing their grid square activations on https://hams.at. By visiting the website, you gain easy access to comprehensive information about the operators responsible for activating specific grid squares. Additionally, you have the ability to assess the match score between yourself and a particular rover for a given pass, while also being able to identify the upcoming satellite passes that are accessible from your location.

[ANS thanks Ian Parsons, K5ZM, AMSAT rover page manager, for the above information]

Hamfests, Conventions, Maker Faires, and Other Events

AMSAT Ambassadors provide presentations, demonstrate communicating through amateur satellites, and host information tables at club meetings, hamfests, conventions, maker faires, and other events.

AMSAT Ambassador Clint Bradford, K6LCS, says,

"Think a 75-minute presentation on "working the easy satellites" would be appropriate for your club or event? Let me know by emailing me at k6lcsclint (at) gmail (dot) com or calling me at 909-999-SATS (7287)!"

Clint has NEVER given the exact same show twice: EACH of the 150+ presentations so far has been customized/tailored to their audiences.

[ANS thanks Clint Bradford, K6LCS, and AMSAT for the above information]

Satellite Shorts From All Over

+ EB1AO reports the successful telecommand of AMSAT Spain's HADES-D satellite. A test of the FM transponder is expected to follow.

+ The Russian resupply mission to the International Spacee Station, Progress MS-25, launched on Dec. 1 and then had to be manually docked due to issues with its automated rendezvous system. Cosmonauts Oleg Kononenko, RN3DX, and Nikolai Chub, monitoring the approach from the station's Zvezda module, took over by remote control at the direction of Russian flight controllers and deftly guided the vehicle in for docking early on Dec. 3. (ANS thanks CBS News for the above information)

+ Hubble temporarily took a break from science operations while NASA investigates faulty readings from one of its gyroscopes, just as the telescope hit 30 years on from STS-61, the mission that corrected its optics and brought the iconic space telescope to full operation. On December 8th, Hubble returned to science operations with all three of its gyroscopes operational and the spacecraft healthy. (ANS thanks The Orbital Index and NASA for the above information)

+ With moderate coronal mass ejections (CMEs) inbound and our Sun heading into its solar maximum faster than anticipated, it’s an excellent time to watch for auroras. However, the Space Weather Prediction Center of the National Oceanic and Atmospheric Administration (NOAA) warns that the geomagnetic storms pose risks of increased atmospheric drag and other risks for Low Earth Orbit (LEO) satellites. (ANS thanks The Orbital Index and NOAA for the above information)

Join AMSAT today at https://launch.amsat.org/

In addition to regular membership, AMSAT offers membership to:

* Societies (a recognized group, clubs or organization).
* Primary and secondary school students are eligible for membership at one-half the standard yearly rate.
* Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status.
* Memberships are available for annual and lifetime terms.

Contact info [at] amsat.org for additional membership information.

73 and remember to help Keep Amateur Radio in Space!

This week's ANS Editor,

Paul Stoetzer, N8HM
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